

Hist.' vol. vii. no. 4, p. 489, several specimens in which the proboscis diverges at some distance above the ventral disk into two distinct branches. This may be, in some instances, the result of accidental development, but is more frequently due to an obstruction of the anal canal. I found a specimen of *Batocrinus longirostris* in which, close to the vault, the proboscis branches into two equally heavy tubes; and there appears immediately above their junction a strong inflation or kind of abscess. In another specimen a stoppage or disconnexion must have occurred within the body, for a second proboscis was formed at the ventral disk, developed here, as in every other instance, within the anal series or posterior side of the Crinoid. In one remarkable specimen a second proboscis breaks forth even at the lower end of the calyx, just above the basal plates. The pressure against these parts must have been enormous; for it caused the destruction of an entire ray, the plates of which are bulging out, forming, together with the anal plates, and intermingled with smaller plates such as ordinarily compose the proboscis of this species, a large elongated cavity with a rather large aperture. All these instances give evidence of a pressure from within, and indicate that the outside opening of Palæozoic Crinoids was solely an ejective organ, and could not have had oral functions. I have already mentioned that the anus is separated from the radial series by deep partitions at the inner surface of the vault, thus excluding any connexion with the upper end of the digestive organ. Moreover the casts of *Actinocrinus* show that the course of the proboscis is directed toward the posterior side; and the development of the abnormal proboscis occurs invariably in the anal series. It is therefore hardly necessary to argue on Dr. White's supposition, that the abnormal second proboscis, wherever it occurs, might have served as buccal orifice, as such a theory is unsupported by analogy.

[To be continued.]

XLV.—*Descriptions of new Species of Heterocera from Japan.*—Part III. *Geometrites**. By ARTHUR G. BUTLER, F.L.S., F.Z.S., &c.

Urapteridæ.

153. *Urapteryx veneris*, n. sp.

White; primaries crossed by three brown stripes, which converge towards the inner margin; a discocellular litura of

* The *Geometrites* described in 'Illustrations of Lepidoptera Heterocera' are not included in this paper.

the same colour; outer border narrowly brown, intersected by an orange line; the transverse stripes of the female also orange at their inferior extremities: secondaries with a dot at the end of the cell and a litura across the internal area brown; a fulvous discal belt brownish at the extremities, subangulated and expanded in the middle; two black spots above the caudal angle; fringe orange, tipped with white. Under surface with the stripes dark brown, broken up into spots; the secondaries with two additional brown spots beyond the cell. Expanse 1 inch 5-6 lines.

Yokohama (*Jonas*).

Ennommidæ.

THIOPSYCHE, n. gen.

Allied to *Rumia*, but the palpi longer and more slender; the primaries more acuminate, the outer margin more oblique, undulated, slightly excised at external angle, the inner margin sinuous, the median branches emitted nearer together; secondaries much shorter, with sinuated outer margin, an angle below the apex, costal margin slightly irregular, costal vein running close to the subcostal for two fifths of its length; discoidal cell shorter. Type *T. Pryeri*.

154. *Thiopsyche Pryeri*, n. sp.

Shining sulphur-yellow; outer margin of wings black-brown; fringe very short, white: primaries sparsely speckled with ferruginous; base of costa ferruginous, speckled with white, with several black dots on the margin, followed by an irregular abbreviated oblique ferruginous stria; external area slightly reddish, excepting at the outer angle; two irregular white-speckled red-brown spots beyond the centre of the inner margin: secondaries with a discal series of ferruginous dots on the veils; a red-brown costal spot; collar and palpi tinted with ferruginous. Wings below paler, spotted and speckled with ferruginous rather more than above; the primaries with a broad ferruginous abbreviated band across the apical area; body whitish. Expanse 1 inch 4 lines.

Yokohama (*Jonas*).

I have named this pretty little species after Mr. Pryer of Yokohama, an energetic collector, to whom we are indebted for several interesting Japanese novelties.

ENDROPIA, Guénée.

155. *Endropia mactans*, n. sp.

Wings above bright burnt-sienna red; the disk almost

covered by a nebulous plumbaginous belt, limited internally by the outer line; two parallel oblique lines of blackish, abruptly angulated in the primaries near the costal margin; costal border of primaries spotted with saffron-yellow; a dusky patch above the end of the cell; a black dot at the end of the cell: head blackish, with white crest; thorax whitish brown, with the tegulæ tawny; abdomen deep red, anus white. Under surface testaceous, clouded with grey; the markings as above, all the wings with prominent black discocellular spots. Expanse 1 inch 5 lines.

Yokohama (*Jonas*).

This species somewhat resembles the genus *Chilma* of Walker.

DESCOREBA, n. gen.

Allied to *Caberodes*, with which it agrees in neuration; it differs in having its antennæ pectinated to the tips, its thorax more woolly, and the outer margin of the primaries not angulated. Type *D. simplex*.

156. *Descoreba simplex*, n. sp.

Primaries pale stramineous speckled with dark brown scales and crossed from the apex to the inner margin by a dark brown oblique line; a blackish discocellular dot: secondaries snow-white, slightly tinted with stramineous on the outer border: body stramineous, tegulæ clothed with long whitish hairs. Under surface creamy white, speckled with brown; a discal series of black dots on the veins; primaries with fulvous costa, markings paler than above; secondaries with stramineous costa; legs varied with brown. Expanse 2 inches 1 line.

Yokohama (*Jonas*).

Aspilates niponaria of Felder is a second species of this genus.

ENOCHROMIIDÆ.

NIPHONISSA, n. gen.

Allied to *Monoctenia*, but altogether more slenderly built, the palpi longer, the antennæ considerably more slender, the tegulæ rather shorter, the primaries more sharply angulated. Type *N. arida*.

157. *Niphonissa arida*, n. sp.

♂. Primaries above pale sandy brown, speckled with grey; an oblique grey discal line; a black-edged whitish discocel-

lular dot; apical half of costal margin ochreous; fringe very short, olivaceous, tipped with white: secondaries sandy yellowish irrorated with grey; an interrupted grey discal line and a grey discocellular annulus: body sandy yellowish. Under surface sandy whitish, irrorated with grey; markings nearly as above. Expanse 2 inches 1 line.

♀. Larger and brighter in tint than the male, the discal line of primaries edged with white. Expanse 2 inches 4 lines.

Yokohama (*Jonas*).

Boarmiidae.

BOARMIA, Treitschke.

158. *Boarmia conferranda*, n. sp.

Nearly allied to *B. consortaria*, but much darker, greyer; the discocellular spot of secondaries larger; under surface whity brown instead of creamy white, but with the same markings. Expanse 2 inches.

Yokohama (*Jonas*).

159. *Boarmia lunifera*, n. sp.

Allied to *B. roboraria*, but much darker and larger, the first two blackish lines of the primaries less arched, but rather more irregular; the third line well separated; the two central lines of secondaries nearer together; the outer border of all the wings smoky grey, bounded internally by a series of well-defined blackish-bordered lunate spots. Wings below grey, with blackish discal belt and discocellular spots; primaries with pale costa on which are two black spots, the first of two series of grey spots which cross the wings; apex of primaries white; body below grey. Expanse 2 inches 7 lines.

Yokohama (*Jonas*).

160. *Boarmia displicens*, n. sp.

Near to *B. rhomboidaria*, but altogether darker, the pale spots replaced by white; the three black lines of primaries placed in the male at about equal distances, the middle one not being confused with the outermost one; the two central lines of secondaries much wider apart. Expanse 1 inch 8 lines.

Yokohama (*Jonas*).

161. *Boarmia leucophaea*, n. sp.

Also allied to *B. rhomboidaria*, but considerably darker; the primaries with a white spot just beyond the second black line

and near the apex; the black lines strongly defined; the basal area and one or two ill-defined discal streaks whitish; the central lines of secondaries much nearer together and more strongly defined. Under surface quite different, pale grey, with discocellular spot and discal belts of slightly darker grey. Expanse 1 inch 11 lines.

Yokohama (*Jonas*).

162. *Boarmia angulifera*, n. sp.

Allied to *B. repandaria*, but little more than half the size, considerably darker, more sooty in tint, the markings of the primaries more sharply defined; fringe much longer; primaries below much darker, with a pale patch beyond the cell and a pale apical spot; discocellular spots strongly marked; black marginal spots better marked; fringe spotted with grey. Expanse 1 inch 4 lines.

Yokohama (*Jonas*).

163. *Boarmia agitata*, n. sp.

Allied to *B. repandaria*, but half as large again, the wings (particularly the primaries) far more silky; the lines grey, blurred, but the multitudinous little grey striations more distinct; primaries with a blackish abbreviated bar across the discocellulars, followed by a very irregular whitish band from costal to outer margin; a second narrower blackish bar beyond the cell, being the commencement of the outer or discal line; apex whitish; several subapical white spots; lines of secondaries nearer together, the inner one not being central. Wings below pale smoky brown, with discal lines and whitish markings as above. Expanse 2 inches 4 lines.

Yokohama (*Jonas*).

164. *Boarmia grisea*, n. sp.

Allied to *B. momaria*, black lines similar to those of *B. repandaria*; wings above ashy grey, with the basal and discal areas clouded with red-brown; margin dotted with black; primaries with a black-edged **■**-shaped brown spot at the end of the cell. Under surface whitish, with grey discal belt; the lines grey, ill defined; primaries with a white apical spot. Expanse 1 inch 8 lines.

Yokohama (*Jonas*).

165. *Boarmia senex*, n. sp.

Belongs to the *B.-consortaria* group, but rather whiter and with broader primaries; the lines black and similar to those

of *B. trispinaria*, excepting that the outer line is rather nearer to the external margin and more strongly dentated. Expanse 2 inches.

Yokohama (*Jonas*); Hakodaté (*Whitely*).

166. *Boarmia insolita*, n. sp.

Wings above silvery grey; a subbasal sandy yellowish belt, on and immediately beyond which are two interrupted transverse black lines; a black costal oblique dash above the end of the cell, and a small yellow spot at base of first median branch; an interrupted sinuated black line beyond the cell, followed by a sandy-yellowish discal belt; outer border broadly dusky, intersected by a submarginal undulated whitish line; two quadrate dusky patches placed angle to angle from above the second median branch to the outer margin; a series of black marginal spots: secondaries with discal lines and belts, and marginal spots as in the primaries. Under surface silvery white, with dusky discocellular spots; primaries with the discoidal and apical areas faintly tinted with grey; an ill-defined grey discal line. Expanse 1 inch 7 lines.

Hakodaté (*Whitely*).

Allied to *B. cinctaria*.

TEPHROSIA, Boisduval.

167. *Tephrosia charon*, n. sp.

♂. Silvery grey; the wings crossed by three black lines, the two outer ones of the primaries converging towards the inner margin, and all of them bent inwards above the middle; outer border slightly darker than the rest of the wings, intersected by a wavy dusky-bordered white line; thorax transversely banded with black: under surface grey; the wings with a very slightly darker discal belt. Expanse 1 inch 11 lines.

♀. Much browner in tint; the under surface with well-defined darker discal belt, very dark on the primaries. Expanse 1 inch 9 lines.

♂, Hakodaté (*Whitely*); ♂ ♀, Yokohama (*Jonas*).

168. *Tephrosia ignobilis*, n. sp.

Nearly allied to *T. transfixaria* from East Florida, but the lines across the wings less oblique, the first one also not double; under surface sandy brown instead of whitish. Expanse 1 inch 4 lines.

Yokohama (*Jonas*).

This is a silvery grey or whitish species crossed by four irregular blackish lines, the last two of which are doubled; the outer border is dusky.

HYPOCHROMA, Guénée.

169. *Hypochroma Pryeri*, n. sp.

Allied to *H. dispensata*, but ashy grey; the two lines across the wings similar, external area crossed by a zigzag white line; black discocellular dots; a marginal series of black dots: wings below white; a broad discal blackish belt with straight internal edge, produced externally in one or two places so as to reach the margin; black discocellular spots; primaries with greyish basal area. Expanse 1 inch 8 lines.

Yokohama (*Jonas*).

170. *Hypochroma superans*, n. sp.

Testaceous, the wings, excepting at the base, greenish sericeous crossed by multitudinous short grey lines; black discocellular lines; an interrupted irregular white lunulated discal stripe, indistinct in secondaries; a submarginal series of white dots; a marginal series of black spots; fringe rather long, ashy grey; primaries with the costa black-spotted; apex of palpi and frons black. Under surface of the wings white, yellow at the base; large black discocellular patches; a blackish spot in each discoidal cell, and below it a well-defined grey longitudinal dash; a broad blackish discal belt crossed by an interrupted white line; a series of black marginal spots: primaries with the costa black-spotted; external area streaked with blackish: body ochraceous, legs above blackish. Expanse 2 inches 6 lines.

Yokohama (*Jonas*).

One of the finest species yet described.

BYLAZORA, Walker.

171. *Bylazora virescens*, n. sp.

Primaries above pale dull sericeous sap-green, irrorated with black scales, most densely towards the base; costal margin black-dotted; an oblique abbreviated line across the cell, the discocellulars and an oblique, slightly concave subapical line blackish; three or four subapical hastate blackish spots in a transverse series beyond the line; a zigzag submarginal blackish line, black-dotted externally, and connected with a series of black marginal spots by blackish longitudinal internervular lines: secondaries pale greyish brown, nearly

white; discocellulars and an irregular discal line dusky; disk beyond the line striated with dusky scales; a marginal series of black dots: body corresponding in colour with the wings. Under surface sericeous white, a series of black marginal dots: primaries with dusky-speckled testaceous costal margin; a quadrate discocellular blackish spot; a blackish angular discal stripe: secondaries with elongated discocellular blackish spot; an ill-defined discal stripe. Expanse 1 inch 9 lines.

Hakodaté (*Whitely*).

Geometridæ.

JODIS, Hübner.

172. *Jodis claripennis*, n. sp.

Aspect of *J. putataria*, but of twice the size; chalky white with a single snow-white discal line bordered internally by a pale yellowish line, oblique in primaries and subangulated in secondaries; costal margin of primaries and antennæ pale ochraceous; frons, palpi, and margin of eyes ferruginous; under surface of tibiæ and tarsi ochraceous; wings below without discal line. Expanse 1 inch 6 lines.

Yokohama (*Jonas*).

THALASSODES, Guénée.

173. *Thalassodes marina*, n. sp.

Pale bluish green; wings shining, with irregular angulated discal line; fringe white; primaries with ochreous costal margin spotted with black; crest of head and base of antennæ white, abdomen whitish; under surface paler, without markings: body below white. Expanse 1 inch 1 line.

Yokohama (*Jonas*).

THALERA, Hübner.

174. *Thalera crenulata*, n. sp.

Pale green; margin of the wings ferruginous; fringe white, spotted with ferruginous at the terminations of the nervures; primaries with creamy costal margin; two transverse, irregular, parallel, shining white lines; secondaries with one irregular white discal line; antennæ white; frons, palpi, and part of the anterior legs ferruginous, remainder of legs white; wings below paler, without white lines. Expanse 11 lines.

Yokohama (*Jonas*).

Ephyridæ.

ANISODES, Guénée.

175. *Anisodes hadassa*, n. sp.

Ochraceous, wings irrorated with grey, crossed by three more or less defined crenulate grey lines bordered with dull lilacine (in some examples barely distinguishable); well-marked black discocellular spots; a marginal series of more or less defined blackish dots; primaries with the costa more or less plumbaginous and transversely striated with grey; collar grey or plumbaginous: under surface paler and clearer; primaries always with one well-marked discal grey stripe (some examples with two in all the wings); grey irrorations and black discocellular spots as above. Expanse, ♂ 1 inch 2 lines, ♀ 1 inch 4-5 lines.

Yokohama (*Jonas*).

Allied to *A. imitaria*.

Acidaliidæ.

ASTHENA, Hübner.

176. *Asthenes corculina*, n. sp.

Snowy white, sericeous; wings crossed by parallel irregular ochreous belts at equal distances, seven on the primaries (the last abbreviated), and three across the disk of secondaries; discocellular spots and marginal dots black; belts below ill-defined, grey; spots black, but less defined, the marginal dots partly or wholly absent. Expanse 9 lines.

Yokohama (*Jonas*).

177. *Asthenes superior*, n. sp.

Nearly allied to the preceding, but larger, the wings sparsely and minutely black-speckled; secondaries with an additional ochreous belt across the discoidal cell: wings below snow-white, with a single grey discal line; discoidal area of primaries slightly greyish. Expanse 11 lines.

Yokohama (*Jonas*).

Although larger, this is a more delicate-looking species than the preceding.

178. *Asthenes confusa*, n. sp.

Shining white, with large black discocellular spots; primaries crossed by six ochreous irregular belts at unequal distances, the three outermost crowded together; four marginal

black dots towards apex; fringe slightly ochreous: secondaries crossed by four parallel ochreous belts, the first crossing the cell, the others discal. Belts below brown, obsolete towards the base; black spots as above; primaries with brownish discoidal area. Expanse 1 inch.

Yokohama (*Jonas*).

179. *Asthena nupta*, n. sp.

♂. White, minutely black-speckled; primaries crossed by five, and secondaries by four parallel irregular yellowish belts, the outermost belt marginal and ill-defined: under surface with the belts reduced to grey lines, very indistinct on the secondaries, the one across the cell of primaries obsolete; black discocellular dots; primaries with yellowish costal margin. Expanse 1 inch 1 line.

♀. Slightly yellower than the male, larger, with better-defined markings. Expanse 1 inch 4 lines.

♂, Yokohama (*Jonas*); ♀, Hakodaté (*Whitely*).

This species is allied to the European "*Acidalia sylvestraria*" and *A. byssinata*; but as I find that *A. sylvestraria* does not differ in structure from *Asthena candidata* I shall place both in *Asthena*.

ACIDALIA, Treitschke.

180. *Acidalia hanna*, n. sp.

Pale brown, wings crossed by a central oblique dusky belt, on which the discocellular spot of secondaries is placed; three irregular brown discal lines converging towards the costa of primaries; these wings with one or two oblique basal lines; marginal and discocellular dots black, collar brown: under surface whiter, the belt and lines ill-defined; a discal series of black dots in addition to those of the upper surface. Expanse 10 lines.

Yokohama (*Jonas*).

A variety of the female occurs, nearly white, with the markings ill-defined and the wings expanding 1 inch.

A. hanna is allied to *A. inductata*.

181. *Acidalia jakima*, n. sp.

Upper surface whity brown, with rosy lilacine costal and outer borders: primaries crossed by three slightly wavy oblique rosy lines, the outermost of which bounds the lower half of the outer border; a black discocellular dot; fringe pale tawny: secondaries crossed by two wavy lines, the outer one

bounding the outer border; discocellular dot and fringe as in primaries: body whitish brown; back of head and collar lilacine; anal segment slightly lilacine, with testaceous terminal tuft: under surface sericeous, with two wavy discal dark grey lines; a slender blackish marginal line; primaries greyish. Expanse 11 lines.

Yokohama (*Jonas*).

MICRÆSCHUS, n. gen.

Allied to *Hyria*, with which it has been confounded, but differing in the more robust character of its body and broader shorter primaries with angulated outer margin. Type *Hyria elataria*.

182. *Micræschus aureus*, n. sp.

Primaries golden straw-yellow, crossed by two slender blackish lines, the inner one concave, the outer one angulated, between them a black discocellular dot; margin black; fringe white, spotted with black at apex and below the middle: secondaries white, with brownish external area; marginal line black, fringe sordid white: body straw-colour. Under surface white, primaries clouded with greyish brown; discocellulars and an angulated discal stripe black; costal margin black-spotted towards apex; fringe as above: secondaries with black discocellular dot and blackish discal spot. Expanse 8 lines.

Yokohama (*Jonas*).

Microniidæ.

EROSIA, Guénée.

183. *Erosia moza*, n. sp.

Shining greyish brown, reticulated with slaty grey; fringe dark brown: primaries crossed near the base by an arched dark brown line; an oblique abbreviated dark brown line from the costa beyond the middle; a dark brown quadrate spot bounded externally by a black Γ -shaped marking on the inner margin, and a reddish-brown streak spotted with black near the outer margin: secondaries crossed near the base by a black line; a black angulated and sinuated discal line, edged externally with white, and partly bounded internally by a tawny belt; a sordid ochraceous sagittate marking through the cell; a sordid ochraceous streak from the inferior caudal process to just beyond the end of the cell; a black costal litura near apex; two white-edged black dots above the in-

ferior caudal process; marginal line silvery white, edged internally with brown. Under surface whitish brown, striated with blackish; primaries suffused with grey. Expanse 1 inch.

Yokohama (*Jonas*).

Some examples are rather smaller and much paler than the type.

184. *Erosia rapha*, n. sp.

Snow-white; wings crossed near the base by a semicircular series of dark brown dots: primaries with a very irregular red-brown discal band, margined and intersected by blackish lines and bounded externally by subconfluent large black spots; two subapical black dots connected with the apex by a black line; a sigmoidal pale-brown marking near the outer margin; base of costa blackish: secondaries with the external area excepting at apex broadly red-brown, interrupted by one or two small white spots, and internally by an angulated white-edged brown discal line; margin from the superior caudal process downwards dark brown; a black dot below the inferior process: body spotted with blackish. Under surface white; basal area sordid; external area, especially of primaries, varied with smoky brown. Expanse 11 lines.

Hakodaté (*Whitely*).

185. *Erosia azela*, n. sp.

Primaries above with the basal two thirds, excepting a creamy patch at centre of inner margin, chocolate-brown, crossed by two parallel tawny transverse lines; external area silvery white, brown-speckled internally, and interrupted by a marginal series of triangular brown spots: secondaries with the basal half cream-coloured, bounded by a brown discal belt; external area silvery white; marginal spots as in primaries, but smaller; fringe spotted with brown: head and thorax blackish; shoulders plumbaginous; abdomen cream-coloured. Under surface altogether paler, but very similar in character to the upper surface. Expanse 11 lines.

Yokohama (*Jonas*).

Caberidæ.

CABERA, Treitschke.

186. *Cabera eliela*, n. sp.

Whitish brown: primaries crossed by nine irregular white stripes, the fifth and sixth of which are convergent in the centre, and form the central band, the ninth submarginal and

zigzag: secondaries crossed by five or six stripes, somewhat confused at the base, the outermost one being submarginal and zigzag; a scarcely perceptible slender blackish marginal line bordered with white; fringe whitish. Under surface greyish; the lines, excepting two across the disk, confused and indistinct. Expanse 1 inch 6 lines.

Yokohama (*Jonas*).

Somewhat allied to *C. unduliferaria* of Motschoulsky.

CORYCIA, Duponchel.

187. *Corycia virgo*, n. sp.

Silvery white; wings with blackish dots at the terminations of the veins; a brown dot at the inferior angle of each discoidal cell; antennæ bright ochreous. Under surface pearly; legs slightly yellowish. Expanse 1 inch 5 lines.

Yokohama (*Jonas*).

188. *Corycia sacra*, n. sp.

Snow-white, each wing with two well-defined black discocellular spots: primaries crossed by two pale ochraceous stripes, the inner one angulated, the outer one zigzag; secondaries crossed by one slightly undulated discal stripe: wings below without stripes. Body creamy; antennæ with ochraceous pectinations. Expanse, ♂ 1 inch 2 lines, ♀ 1 inch 4 lines.

Yokohama (*Jonas*).

THYSANOCHILUS, n. gen.

Allied to *Corycia*, but the antennæ broadly pectinate for three fourths of their length, and then naked to the tip; wings with long internal and external fringes. Type *T. purus*.

189. *Thysanochilus purus*, n. sp.

Shining white; wings speckled with dark brown, with black discocellular dots: primaries crossed by three ochreous stripes, the innermost and outermost being regularly zigzag, the central stripe less strongly zigzag; fringe of internal border ochreous: secondaries crossed by two zigzag ochreous stripes: antennæ with grey pectinations. Wings below with the brown speckling more distinct, only the discal stripe discernible. Expanse 1 inch 4 lines.

Yokohama (*Jonas*).

Macariidæ.

MACARIA, Curtis.

190. *Macaria zachera*, n. sp.

Sordid white, becoming pure white at outer border, speckled with black; two central parallel dark brown lines on a yellowish ground, the outer one abruptly angulated and forked towards the costa of primaries, the fork filled in with ochraceous; a slender undulated marginal blackish line; fringe cream-coloured; black discocellular spots: primaries crossed by an angulated dark brown line near the base. Body greyish. Wings below brighter than above, but very similar in marking. Expanse 1 inch 5 lines.

Yokohama (*Jonas*).

Near to *M. pervolgata*.

191. *Macaria maligna*, n. sp.

Pattern of the preceding species, but the ground-colour above slaty grey: below sandy yellow, with broad tawny external area; markings as above. Expanse 1 inch 3 lines.

Yokohama (*Jonas*).

Allied to *M. vasudeva*.

BITHIA, Walker.

192. *Bithia amasa*, n. sp.

Greyish testaceous, covered with brown striations; the basal area crossed by two ill-defined subangulated darker stripes; a series of blackish discal dots more or less connected by a very indistinct undulated line, barely perceptible on the primaries; a discal pinky-brownish irregular belt, clouded with blackish in the primaries; outer border paler brown; fringe yellowish: primaries with yellow-dotted black costal margin, a pale testaceous apical patch, a series of blackish marginal spots: secondaries with whitish costal area; a blackish spot near the base; discocellulars blackish. Under surface bright testaceous, covered with brown striations; large black discocellular spots; a nearly central ferruginous stripe; a broad discal ferruginous belt; outer border clay-coloured, clouded with ferruginous: primaries with bright testaceous apical spot: anterior coxæ bright ochreous. Expanse 1 inch 8 lines.

Yokohama (*Jonas*).

Allied to "*Hemerophila*" *prætereuns*.

Fidoniidæ.

LOZOGRAMMA, Stephens.

193. *Lozogramma bela*, n. sp.

Primaries pale pinky brown, crossed immediately beyond the cell by a chocolate-brown line; secondaries whitish, with creamy external area, brown-speckled, crossed by a slender brown discal line; body cream-coloured; antennæ with blackish pectinations. Under surface cream-coloured, with yellowish costal borders; all the wings brown-speckled, with red-brown discocellular spots and grey-brown discal line. Expanse 1 inch 5 lines.

Yokohama (*Jonas*).

194. *Lozogramma Amelia*, n. sp.

Shining: primaries golden brown, crossed by three pale-edged indistinct undulated grey lines, the outermost one bounded externally by small ovoid plumbaginous spots, which become whitish towards the costa; a large rounded whitish spot enclosing a black dot, and margined with brown, at the end of the cell; external area slightly greyish, crossed by a zigzag dusky submarginal line bounded outwardly by a series of pale spots; marginal line of the ground-colour with two blackish dots on each internervular division; fringe traversed by a grey line: secondaries white, with sordid white fringe. Body testaceous. Under surface whity brown: primaries slightly greyish; upper discocellular and a subangulated undulated discal line grey; an oblique apical grey dash; marginal dots as above: secondaries with blackish discocellular dot and two subangulated discal series, the inner series very indistinctly connected by a pale line; marginal dots as in primaries. Expanse 1 inch 3 lines.

Yokohama (*Jonas*).

SELIDOSEMA, Hübner.

195. *Selidosema sordida*, n. sp.

Sordid white: primaries with pale smoky-brown borders; three greyish brown costal spots, the third slender and transverse; outer border irregularly bisinuated internally, with a greyish patch just above the middle, and a second at external angle; a marginal series of black spots: secondaries with the basal area greyish; a broad central dark grey angulated belt, bounded externally by a series of black spots; a black

discocellular spot on the belt; several greyish-brown costal spots, and an imperfect series along the outer margin; a discal spot beyond the cell and a streak near the anal angle tawny. Body pale brown; pectinations of antennæ blackish. Under surface whity brown; wings mottled with grey, with blackish discocellular dots; primaries with a central costal spot and discal arched streak grey. Expanse 1 inch 3 lines.

Hakodaté (*Whitely*).

The type of this species is somewhat rubbed; it is possible that in fresh examples there may be a brownish belt across the primaries.

[To be continued.]

XLVI.—*On the Number of Cervical Vertebrae in Dinornis.*

By F. W. HUTTON, Professor of Zoology in the University of Otago.

THE number of cervical vertebrae in *Dinornis* was estimated in 1856, by Prof. Owen, at 15, in *D. elephantopus* (Trans. Zool. Soc. iv. p. 161); and this number was also adopted by Prof. von Haast in his printed schedule of Moa-bones in the Canterbury Museum. In Prof. Owen's paper in Trans. Zool. Soc. vol. x. p. 147, which, much to the regret of all New-Zealand naturalists, he announces as probably his last on the Moa, he still adheres to the same number, and suggests that in the photographed skeleton of *D. elephantopus* (more properly I now think *D. crassus*) in the Otago Museum there are two cervical vertebrae too many*. However, specimens in the museum of the necks of individual birds show that the real number is 20 or 21; and I therefore think it necessary for me to give the evidence for my restoration of the skeleton referred to.

The museum possesses nine necks, or portions of necks, from the sand-hills at Shag Point, Otago, belonging to single birds. These were all found in their proper positions, and were at once strung, and then numbered so as to prevent the possibility of any subsequent misplacement. The species to which they belong cannot yet be accurately determined; but they are of three different sizes. The smallest (**A**, **B**, and **G**) belong, I believe, to *D. casuarinus*; the middle size (**C**, **D**,

* Prof. Owen has been led into a mistake by having a photograph only to examine. In the skeleton, as restored, there are twenty-one, not seventeen, cervical vertebrae.